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October 26, 2009

VIA ELECTRONIC FILING
Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: **Notification of *Ex Parte* Communication by Hughes Communications, Inc. in GN Docket No. 09-51**

Dear Ms. Dortch:

This letter provides notice, in accordance with Section 1.1206 of the Commission's Rules, that on October 23, 2009, representatives of Hughes Communications, Inc. ("Hughes") met with individuals from the Commission's Omnibus Broadband Initiative to discuss the role satellites play in providing broadband services in the United States. The Hughes representatives provided detailed descriptions of current and future Hughes services and operational processes to the Commission representatives. The participants discussed the materials in the attached presentation, which is a redacted version of the presentation that Hughes regards to be Highly Confidential under the terms and processes of the October 8, 2009 Protective Order in GN Docket No. 09-51, *A National Broadband Plan for Our Future*, Protective Order, DA 09-2187 (WEB, released October 8, 2009). The unredacted, Highly Confidential presentation will be submitted under the procedures specified in the Protective Order.

The Commission was represented at the meeting by Arnab Das, Byron J. Neal, Kevin B. King, and Rohit Dixit. Hughes was represented by Paul Gaske, Executive Vice President, North American Division; Dean Manson, Senior Vice President, General Counsel & Secretary; and Steven Doiron, Senior Director, Regulatory Affairs.

One electronic copy of this letter (with enclosure) is being submitted into the above-referenced docket by electronic filing.

Please direct any questions to the undersigned.

Respectfully yours,

Stephen D. Baruch
Counsel for Hughes Communications, Inc.

Encl.
cc (w/encl.) by e-mail: Arnab Das
Byron J. Neal
Kevin B. King
Rohit Dixit

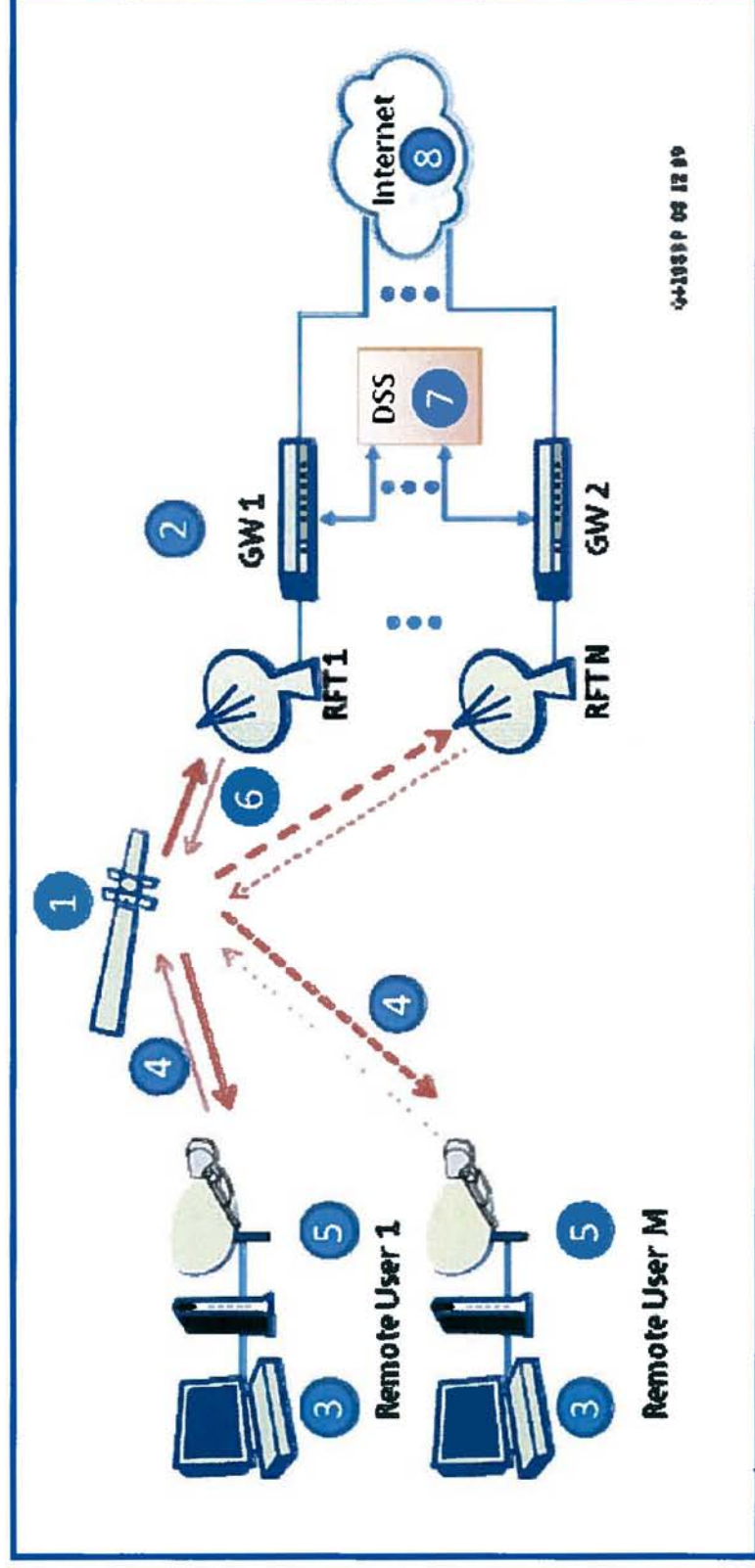# Satellite Diligence Questions to FCC

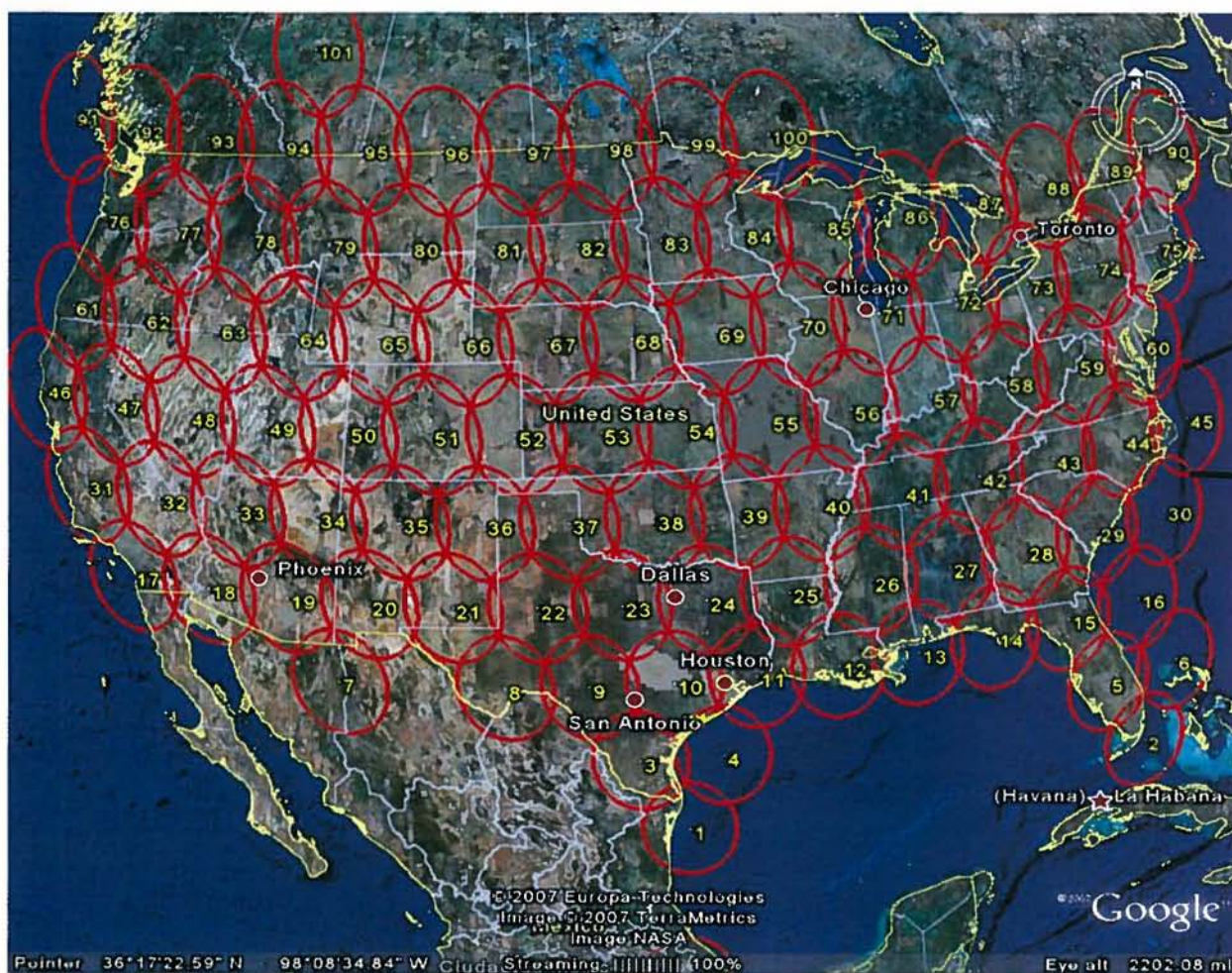Oct 2009

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Hughes Communications, Inc.

Data Flow Overview

GW 1

GW 2

DSS

Internet

RFT 1

RFT N

Remote User 1

Remote User M

Current Coverage (Spaceway)

Approx 200 miles

Total Capacity: 10 Gbps

Current Coverage (Spaceway)

Total Capacity: 10 Gbps
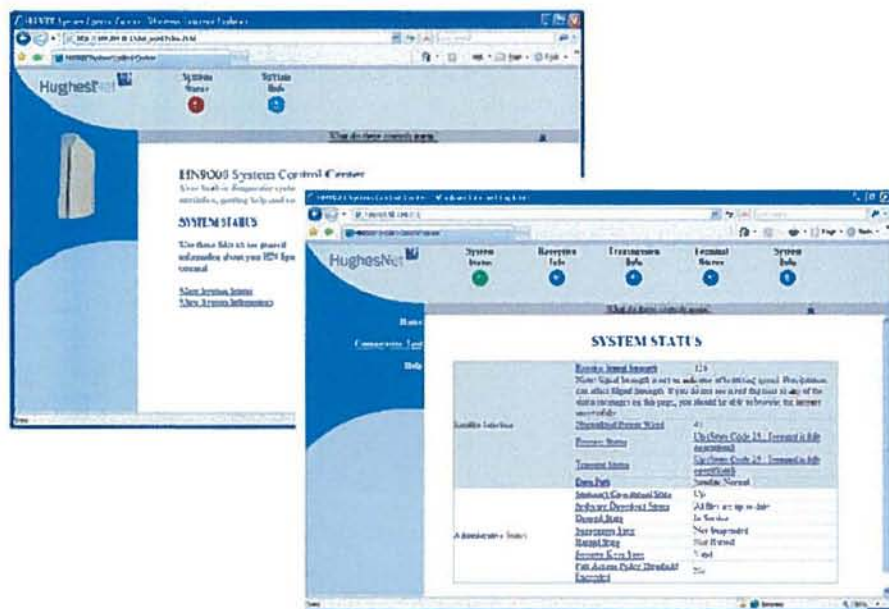
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Jupiter Coverage

Total Capacity: 100 Gbps

End User Equipment – HN9000

Feature Highlights

- **Rates**
    - Inbound - Up to
    - Outbound - Up to
- **Connectivity**
    - Mesh (any-any) support
    - QoS Support
- **Performance Enhancements**
    - Data Prioritization
    - Integrated TCP Acceleration
    - Web Page Acceleration
    - Data Compression
- **Router Functionality**
    - DHCP Server/Relay
    - Network Address Translation
- **Local Graphical User Interface**
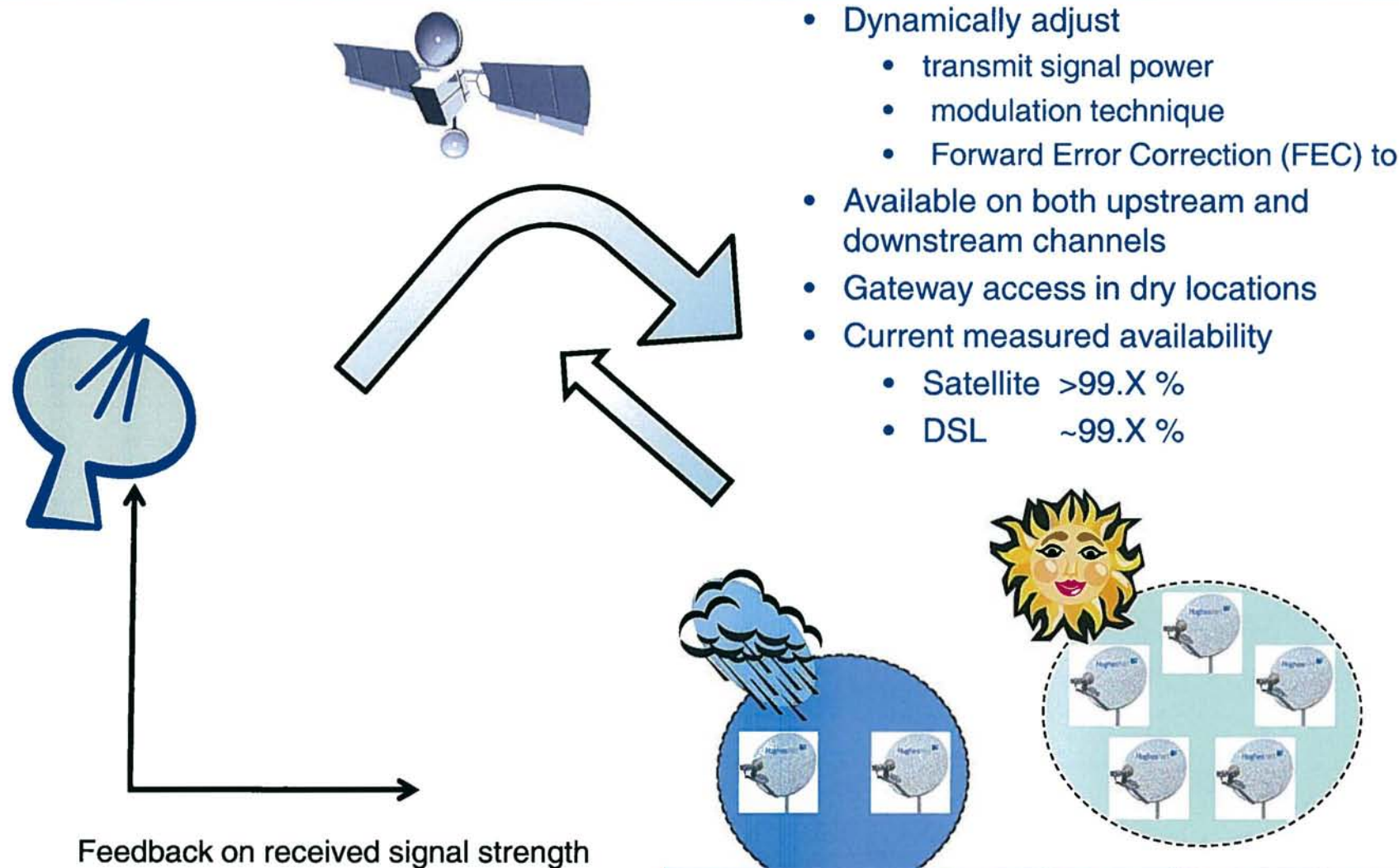- **Integrated Data Encryption**

74cm antenna

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5

Recent HughesNet Customer Distribution

Technology has Overcome Rain Fade

- Dynamically adjust
  - transmit signal power
  - modulation technique
  - Forward Error Correction (FEC) to
- Available on both upstream and downstream channels
- Gateway access in dry locations
- Current measured availability
  - Satellite >99.X %
  - DSL   ~99.X %

Feedback on received signal strength

REDACTED – FOR PUBLIC INSPECTION

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7

Latency & Application Acceleration

- ❖ Latencies are introduced in four primary areas:
  - Buffering and queuing delays at consumer satellite terminal: minimal
  - Propagation Delay: ~250ms one way (continental US)
  - Buffering and queuing delays at Gateway: XX ms varies with load
  - Internet delays: ~10ms
  - Typical PING times (round trip latency): XX ms
- ❖ Integrated application acceleration to achieve excellent user performance

Application Acceleration Sample Results

Bandwidth Savings

Web - HTTP, Intranet

FTP

Mail - Exchange

WebMail (Outlook)

Software Updates

| 0% | 2% | 4% | 6% | 8% | 10% | 12% | 14% | 16% |

Performance Gain

Web - HTTP, Intranet

FTP

Mail - Exchange

WebMail (Outlook)

Software Updates

| 1X | 2X | 4X | 8X | 16X |

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Web Acceleration Measured Results

❖ Chart provides the measured bit rate for loading popular consumer site home pages over HughesNet consumer service with web acceleration

•Results based on HughesNet ProPlus plan (1.5 Mbps download). Results may vary based on Time of day

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Capacity Requirements and Traffic Engineering

❖ Significant variation in offered user demand*:
  - X% of Home plan users downloaded < avg. X MB/day
  - Top 1% downloaded > 500 MB/day

❖ Oversubscription:
  - Similar to telephone erlang loading in peak hour concept
  - Well accepted practice for bursty data networks design
  - Delivers high user performance at attractive economics
  - Spaceway with 10Gbps is expected to support X K subs
  - Oversubscription in a satellite broadband environment has several differences from typical wireline traffic engineering:

Technology	Description	Impact
Data Reduction	As the satellite operator controls both sides of the link, sophisticated data reduction techniques to reduce network traffic.	Higher user throughput for unit network capacity
National aggregation	Unlike typical wireline broadband, where aggregation is localized, satellite can aggregate nationally and across service plans.	Flexible traffic engineering to deliver better user performance
"Big Pipe" aggregation	Aggregating large numbers of users in a single large pool is highly efficient. Satellite transponders or beams can be run at X+ Mbps for pooling purposes	Higher network efficiencies to reduce costs

* Internal Hughes statistics, collected and averaged one week during Oct 2009.

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Economics

- ❖ Major Capex items:
  - Satellite, launch vehicle $400M
  - Internet Gateways infrastructure $X M
- ❖ Major Opex items: All items except the first one are generally proportional to customer base.
  - In-orbit satellite insurance
  - Network Operations
  - Internet Gateway expenses
  - Internet bandwidth
  - Customer Service
  - Field Services